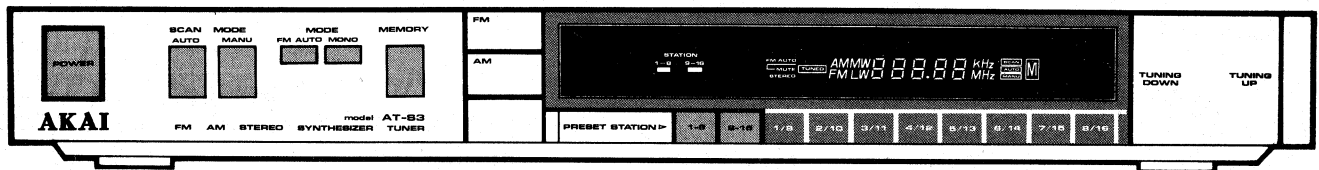


AKAI SERVICE MANUAL



FM/AM STEREO SYNTHESIZER TUNER

MODEL **AT-S3/L**

ABBREVIATIONS FOR SERVICE MANUAL MODEL AT-S3/L

ABBREVIATION	EXPLANATION	ABBREVIATION	EXPLANATION
AC	Alternating Current	LSI	Large-Scale Integration
AF	Audio Frequency	LW	Long Wave
AFC	Automatic Frequency Control	MANU	MANUal
AGC	Automatic Gain Control	MC	Memory Control
ALC	Automatic Level Control	MIX	MIXer
AM	Amplitude Modulation	M,ME	Memory, MEemory
ANT	ANTenna	MONO	MONOphonic
BCD	Binary Coded Decimal	MPX	MultiPleX
BUF	BUffer	OSC	OSCillator
CK	Clock	PLL	Phase Locked Loop
CPU	Central Processing Unit	PSC	PreSCaler
DET	DETECTOR	RAM	Random Access Memory
FF	Flip-Flop	RCH	Right CHannnel
FLD	FLuorescent Display	REG	REGulator
FM	Frequency Modulation	RF	Radio Frequency
FREQ	FREQuency	ROM	Read Only Memory
GND	GrouND	SEG	SEGment
H	High (referring to voltage)	SENS	SENSitivity
IF	Intermediate Frequency	SM	Signal Meter
IND	INDicator	SSG	Standard Signal Generator
INH	INHibit	ST	STereo
INT	INTerrupt	STO	STOre
L	Low (referring to voltage)	SW	SWitch
LCD	Liquid Crystal Display	THD	Total Harmonic Distortion
LCH	Left CHannel	VCO	Voltage Controlled Oscillator
LED	Light Emitting Diode	XT	crystal oscillator Terminal
LPF	Low Pass Filter	XTAL	crysTAL



FM/AM STEREO SYNTHESIZER TUNER

MODEL AT-S3/L

THIS MANUAL IS APPLICABLE TO BOTH SILVER AND PEARL SHADOW PANEL MODELS

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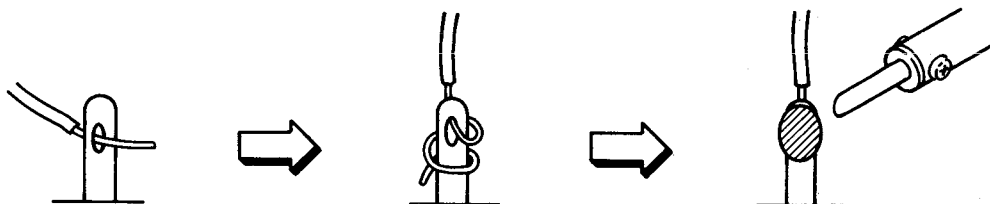
SAFETY INSTRUCTIONS

SAFETY CHECK AFTER SERVICING

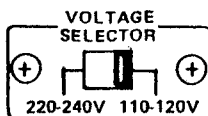
Confirm the specified insulation resistance between power cord plug prongs and externally exposed parts of the set is greater than 10 Mohms, but for equipment with external antenna terminals (tuner, receiver, etc.) and is intended for **C** or **A**, specified insulation resistance should be more than 2.2 Mohms (ground terminals, microphone jacks, headphone jacks, line-in-out jacks etc.)

PRECAUTIONS DURING SERVICING

1. Parts identified by the Δ symbol parts are critical for safety.
Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with specified replacements.
Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
 - 1) Wires covered with PVC tubing
 - 2) Double insulated wires
 - 3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
 - 1) Insulation Tape
 - 2) PVC tubing
 - 3) Spacers (Insulating Barriers)
 - 4) Insulation sheets for transistors
 - 5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.
10. Voltage Conversion
Models for Canada, USA, Europe, UK and Australia are not equipped with this facility. Each machine is preset at the factory according to destination, but some machines can be set to 110V to 120V or 220V to 240V as required. If your machine's voltage can be converted:
 - 1) Disconnect the power cord.
 - 2) Turn the VOLTAGE SELECTOR located on the rear panel with a screwdriver until the correct voltage is indicated.



SECTION 1

SERVICE MANUAL

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For basic adjustments, measuring methods, and operating principles, refer to GENERAL TECHNICAL MANUAL.

I . SPECIFICATIONS

FM TUNER SECTION

TUNING FREQUENCY RANGE	87.4MHz to 108.1MHz
USABLE SENSITIVITY (IHF)	11.2dBf
QUIETING SENSITIVITY (S/N = 50dB) MONO/ST	16.2/37.2dBf
CAPTURE RATIO	1.5dB
SELECTIVITY (400kHz)	60dB
IMAGE REJECTION	85dB
IF REJECTION	90dB
SPURIOUS REJECTION	90dB
AM SUPPRESSION	60dB
SUB CARRIER SUPPRESSION	60dB
S/N (MONO/ST)	75/65dB
T.H.D. (MONO/ST)	0.1/0.3%
STEREO SEPARATION	45dB (1kHz), 35dB (30Hz to 15kHz)
FREQUENCY RESPONSE	30Hz to 15kHz ± 0.5 dB

AM TUNER SECTION

	MW	LW (AT-S3L)
TUNING FREQUENCY RANGE	530 to 1610kHz (USA & Canada) 522 to 1611kHz (Others)	153 to 360kHz
USABLE SENSITIVITY (LOOP)	300 μ V/m	800 μ V/m
SELECTIVITY	25dB	30dB
IMAGE REJECTION	40dB	45dB
IF REJECTION	55dB	55dB
S/N	40dB	35dB
T.H.D.	1%	2%

OUTPUT SECTION

OUTPUT LEVEL	
FM (100% MOD.)	700mV
AM (30% MOD.)	250mV
OUTPUT IMPEDANCE	1.5kohms

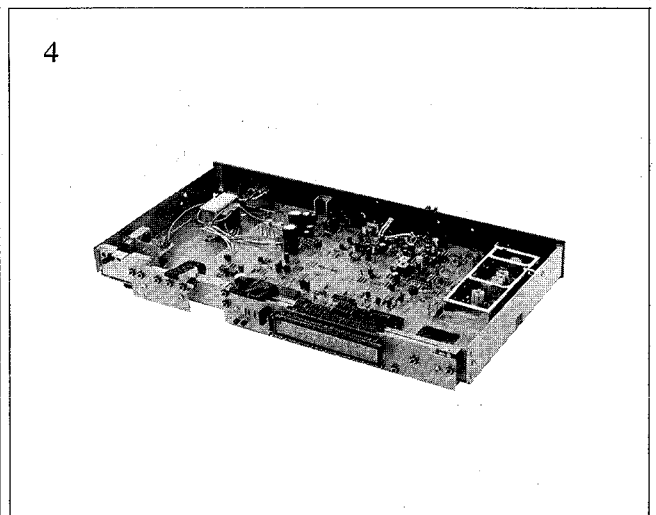
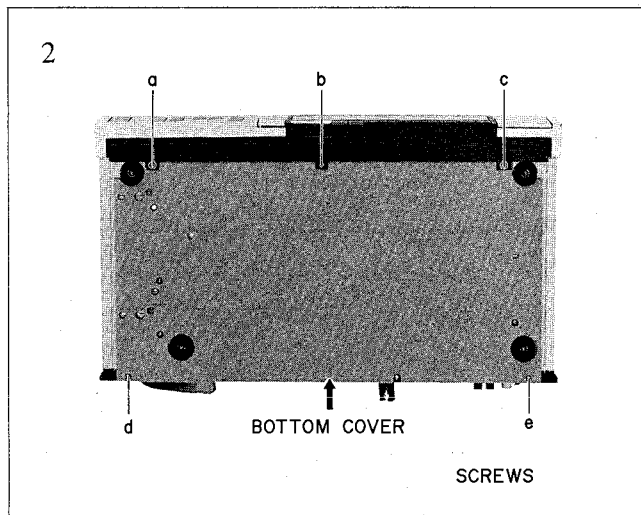
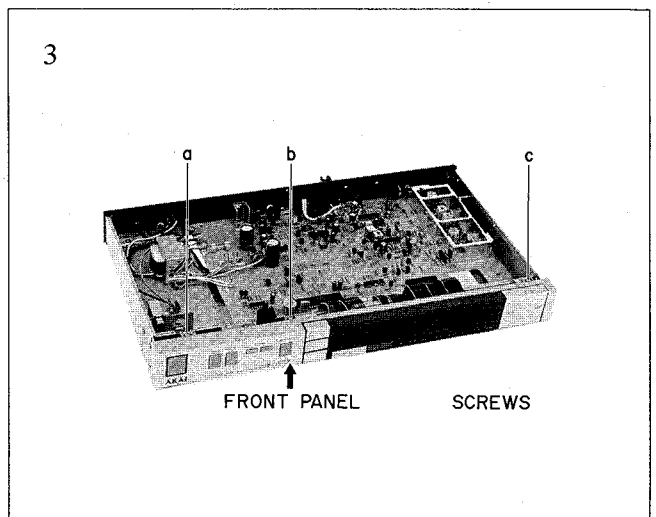
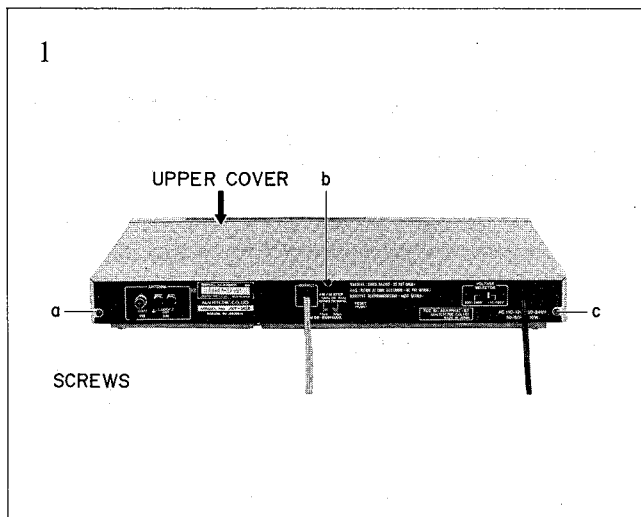
OTHERS

POWER REQUIREMENTS	120V, 60Hz for USA & Canada 220V, 50Hz for European countires 240V, 50Hz for UK & Australia 110-120V/220V-240V, 50/60Hz switchable for other countires
POWER CONSUMPTION	U, C, A Models: 10W
DIMENSIONS	440 (W) \times 53 (H) \times 274 (D) mm (17.3 \times 2.1 \times 10.8 inches)
WEIGHT	2.92kg (6.4 lbs)

* For improvement purposes, specifications and design are subject to change without notice.

II. DISMANTLING OF UNIT

In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the photographs. Reassemble in reverse order.



III. CONTROLS

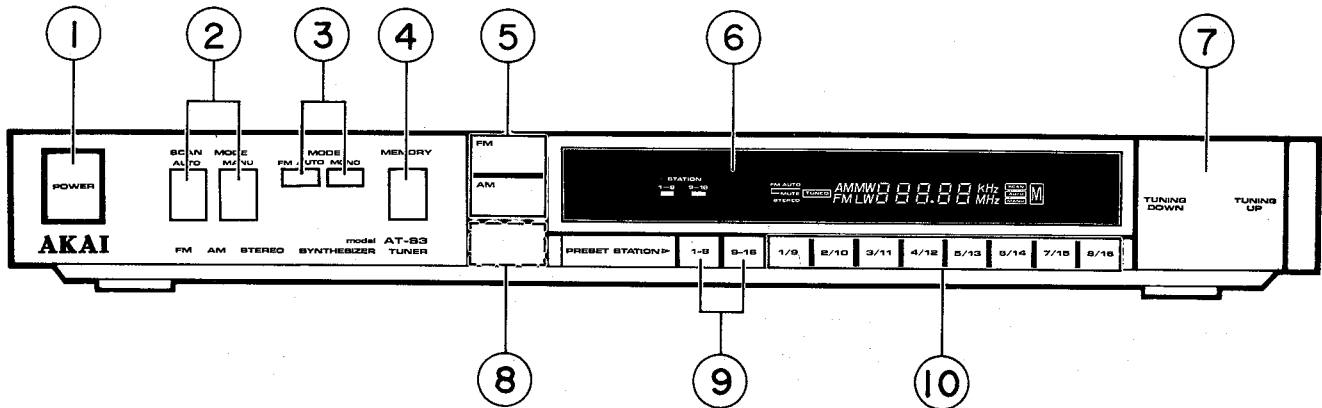


Fig. 3-1

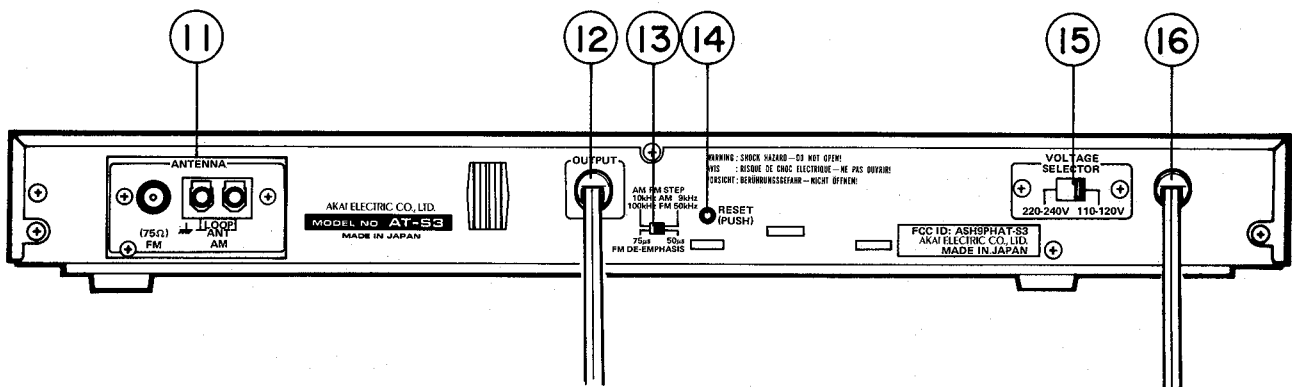


Fig. 3-2

- | | |
|--|--|
| 1. POWER SWITCH | 10. PRESET STATION (1 TO 16) SELECTOR BUTTONS |
| 2. SCAN MODE SELECTORS | 11. ANTENNA TERMINALS |
| 3. FM MODE SELECTORS | 12. OUTPUT CORD |
| 4. MEMORY BUTTON | 13. * AM/FM STEP/FM DE-EMPHASIS SELECTOR SWITCH (□ MODEL ONLY) |
| 5. BAND SELECTOR BUTTONS, FM/AM (FM/MW FOR AT-3L) | 14. * RESET BUTTON |
| 6. FL DISPLAY | 15. VOLTAGE SELECTOR SWITCH (□ Y1 * MODELS ONLY) |
| 7. TUNING (UP/DOWN) BUTTON | 16. POWER CORD |
| 8. BAND SELECTOR BUTTON, LW (AT-S3L ONLY) | |
| 9. HIGH (CH9~16) AND LOW (CH1~8) PRESET STATION SELECTOR BUTTONS | |

* SEE NOTE 1 & 2 FOR DETAILS.
* Y1 = FOR SOUTH AFRICA

NOTE:

1. RESET button

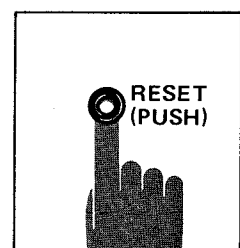
At the back of the Akai AT-S3/L, there is a RESET button which sets the microcomputer inside the Akai AT-S3/L to the initial modes when it is depressed. Depress this button should the following occur when the back-up power for the microcomputer's memory is insufficiently charged.

- The Akai AT-S3/L will not function when a button is depressed.
- A frequency is not properly displayed.
- If it is difficult to depress the RESET button, use a screwdriver or a ball point pen.

When the RESET button is depressed while the Akai AT-S3/L is turned on, it will go into the following initial modes:

- The Akai AT-S3/L will go into FM reception mode.
- The frequency will be set to 87.4 MHz.
- The tuning mode will be set to manual.
- All the preset stations will be canceled.

After depressing the RESET button, you must reset the preset stations again.

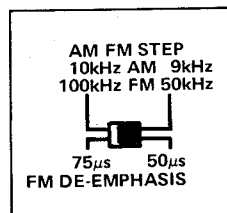


2. AM FM STEP/FM DE-EMPHASIS selector (Not on some models.)

Use this selector to set the frequency scanning steps and to de-emphasize the FM signal in an amount equal to the emphasis made at the broadcasting station. Set this selector according to your area.

Attention

After setting this selector, turn ON the Akai AT-S3/L and then depress the RESET button.



IV. PRINCIPAL PARTS LOCATION

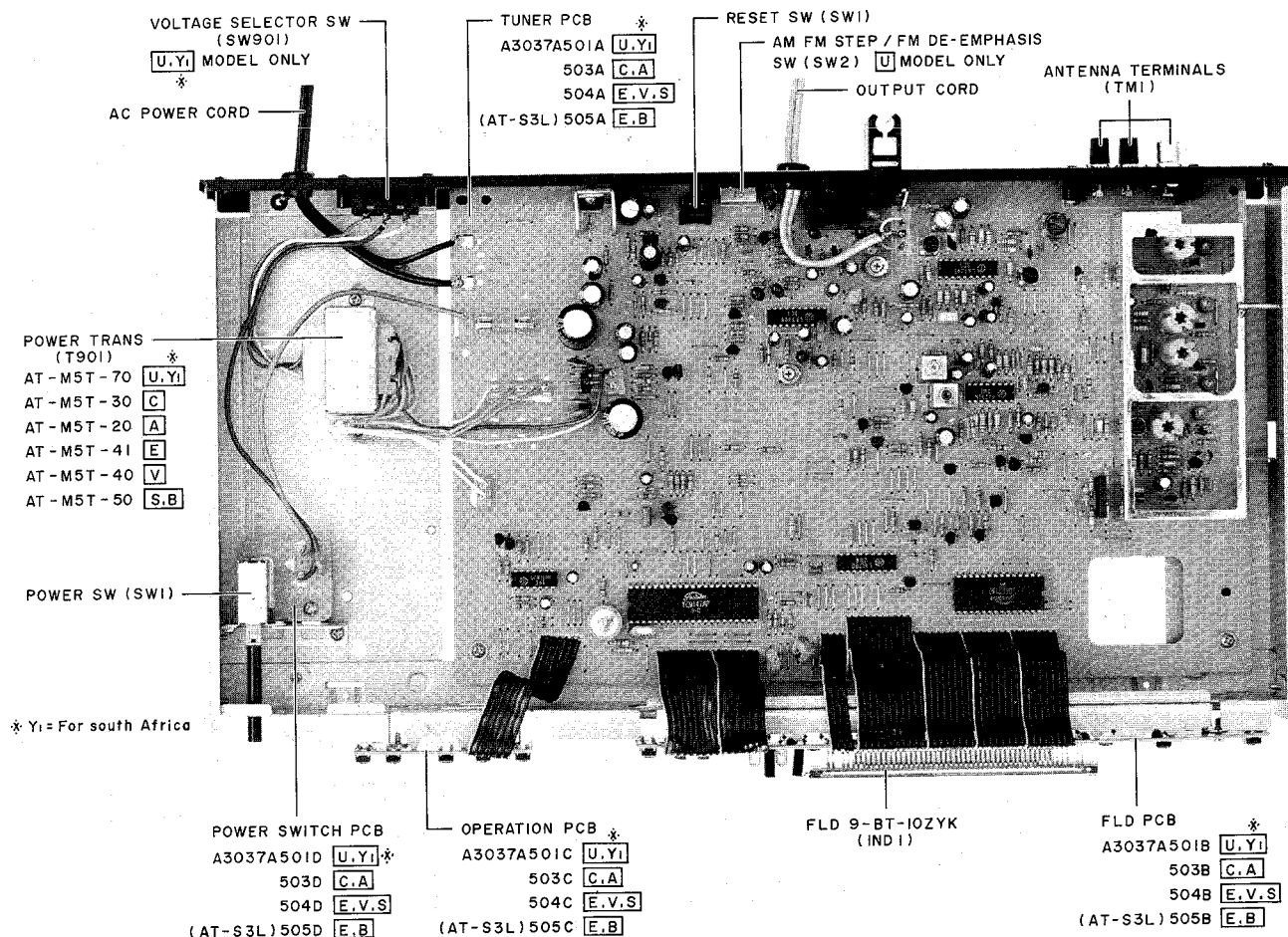


Fig. 4-1 Top View

V. ELECTRICAL ADJUSTMENT

5-1. INSTRUMENT CONNECTIONS FOR TUNER ADJUSTMENT

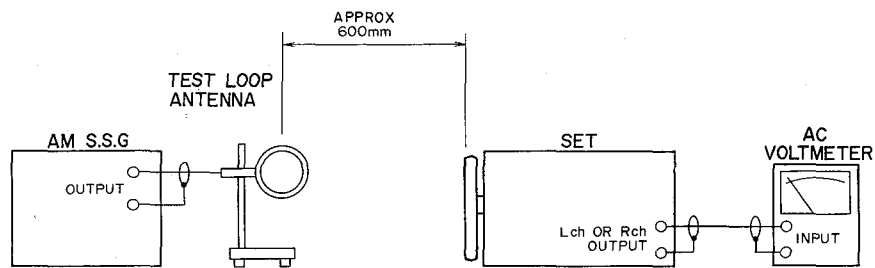


Fig. 5-1 Instrument Connections for AM (MW, LW) Section Adjustment

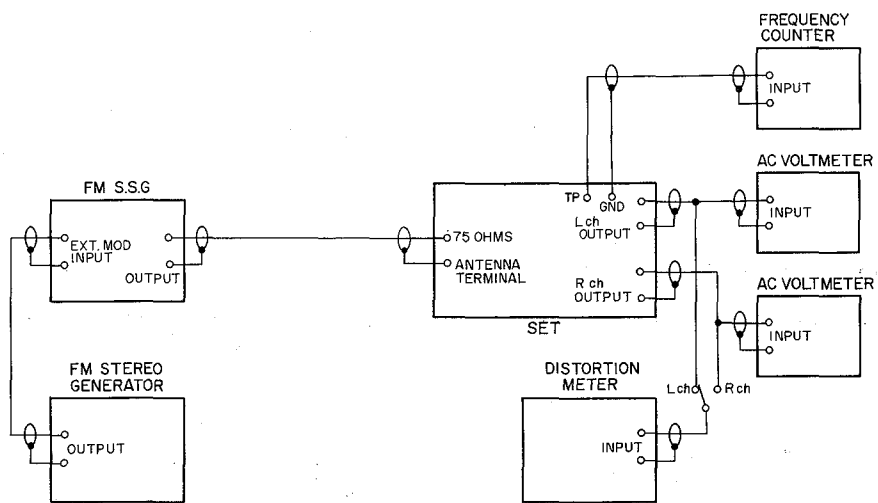


Fig. 5-2 Instrument Connections for FM Section Adjustment

5-2. AT-S3/L TUNER P.C BOARD ADJUSTMENT POINT

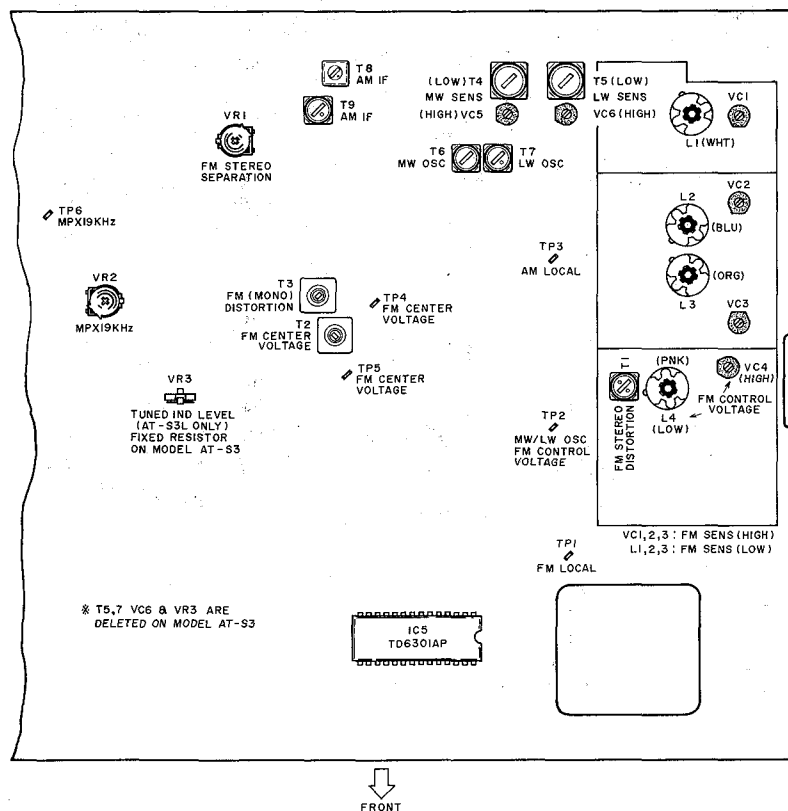


Fig. 5-3

5-3. AM (MW, LW) SECTION ADJUSTMENT (Refer to Figs. 5-1 & 5-3)

Step	Adjustment Item	Adjustment Point	Result	Remarks
1	LW OSC	T7	2.2 \pm 0.01V at 153kHz Less than 24V at 360Hz	<ul style="list-style-type: none"> Band SW to LW. Voltmeter between TP2 & GND. Display to 153kHz & 360kHz.
2	MW OSC	T6	2.3 \pm 0.1V at 530kHz (522kHz) Less than 24V at 1610kHz (1611kHz)	<ul style="list-style-type: none"> Band SW to MW. Display to 530kHz (522kHz) & 1600 kHz (1611kHz). Otherwise in the same condition as above.
3	FM Control Voltage (Low)	L4	3.0V at 88MHz	<ul style="list-style-type: none"> Band SW to FM. Display to 88MHz. Otherwise in the same condition as above.
4	FM Control Voltage (High)	VC4	20.0V at 108MHz	<ul style="list-style-type: none"> Display to 108MHz
5	Repeat steps 3 & 4			
6	AM IF	T8, T9	Maximum output Minimum Distortion	<ul style="list-style-type: none"> Band SW to AM (MW). 1000kHz (999kHz), 90dB input. Display to 1000kHz (999kHz).
7	LW Low Range Sensitivity	T5	Less than 65dB	<ul style="list-style-type: none"> Band SW to LW. 164kHz input. Display to 164kHz. Less than 10% Distortion Factor.
8	LW High Range Sensitivity	VC6	Less than 65dB	<ul style="list-style-type: none"> 299kHz input. Display to 299kHz.
9	Repeat steps 7 & 8			
10	TUNED Indicator Level (AT-3L only)	VR3'	Indicator "TUNED" is lit	<ul style="list-style-type: none"> 250kHz, 65dB input. Display to 250kHz.
11	MW Low Range Sensitivity	T4	Less than 60dB	<ul style="list-style-type: none"> Band SW to MW. 600kHz (603kHz) input. Display to 600kHz (603kHz). Less than 10% Distortion Factor.
12	MW High Range Sensitivity	VC5	Less than 60dB	<ul style="list-style-type: none"> 1400kHz (1404kHz) input. Display to 1400kHz (1404kHz).
13	Repeat steps 11 & 12.			

NOTE: 1. Set the internal modulation signal generator to 30%, 400Hz of each.
2. Use a digital voltmeter for the adjustments in Steps 1 to 5.
3. (kHz) in Result & Remarks indicates the frequencies for AM 9kHz STEP area.

5-4. FM SECTION ADJUSTMENT (Refer to Figs. 5-2 & 5-3)

Step	Adjustment Item	Adjustment Point	Result	Remarks
1	Low Range Sensitivity	L1, 2, 3	Less than 6dB	<ul style="list-style-type: none"> Band SW to FM. 88MHz, Mono input. Display to 88MHz. 3% Distortion Factor.
2	High Range Sensitivity	VC1, 2, 3	Less than 6dB	<ul style="list-style-type: none"> 108MHz input. Display to 108MHz.
3	Repeat steps 1 & 2.			

4	FM Center Voltage	T2	Centered Tuning Meter Indication	<ul style="list-style-type: none"> Center Tuning Meter between TP4 and TP5 (See NOTE 2). Tune only noise without interference from broadcasting.
5	Distortion (Mono)	T3	Less than 0.3%	<ul style="list-style-type: none"> 98MHz, 60dB, Mono input. Display to 98MHz.
6	MPX 19kHz	VR2	19kHz \pm 50Hz	<ul style="list-style-type: none"> Mode SW to FM AUTO. Frequency Counter to TP6. 98MHz, 60dB, Stereo input. Display to 98MHz.
7	Stereo Separation	VR1	More than 40dB	<ul style="list-style-type: none"> 98MHz, 60dB, Stereo L-CH (R-CH) input. Display to 98MHz. Minimum output of R-CH (L-CH).
8	Distortion (Stereo)	T1	Less than 0.5%	<ul style="list-style-type: none"> 98MHz, 60dB, Stereo input. Display to 98MHz.

- NOTE: 1. Set the internal modulation signal generator to 100% (75kHz div.), 1kHz of each.
2. The center tuning center such as the ones used on models AA-R20, 30, 40, 50 & AT-2400, 2600 can be used for this adjustment.
If they are not available, use a digital meter (DC VOLTAGE, RANGE 20V) instead, and adjust T2 so that it indicates 0V at the same condition.
3. Refer to AM Section Adjustment Steps 3 & 4 when only FM Section Adjustment is necessary.

VI. CLASSIFICATION OF VARIOUS PC BOARDS

6-1. P.C BOARD TITLES AND IDENTIFICATION NUMBERS

1) AT-S3

P.C BOARD TITLE	P.C BOARD NO.	DESTINATION
TUNER PCB	A3037A501A (ZED)	U, Y1
TUNER PCB	A3037A503A (ZED)	C, A
TUNER PCB	A3037A504A (ZED)	E, V, S
FLD PCB	A3037A501B	U, Y1
FLD PCB	A3037A503B	C, A
FLD PCB	A3037A504B	E, V, S
OPERATION PCB	A3037A501C	U, Y1
OPERATION PCB	A3037A503C	C, A
OPERATION PCB	A3037A504C	E, V, S

Y1 = For South AFRICA

2) AT-S3L

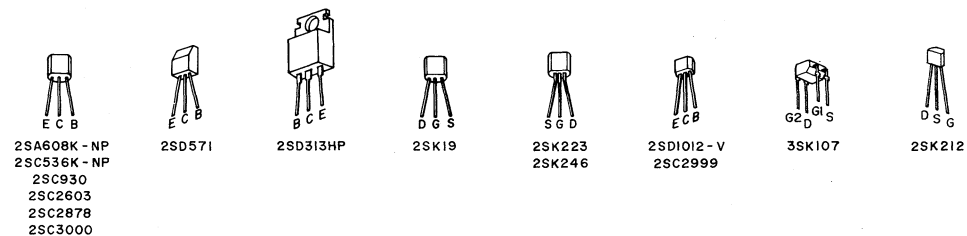
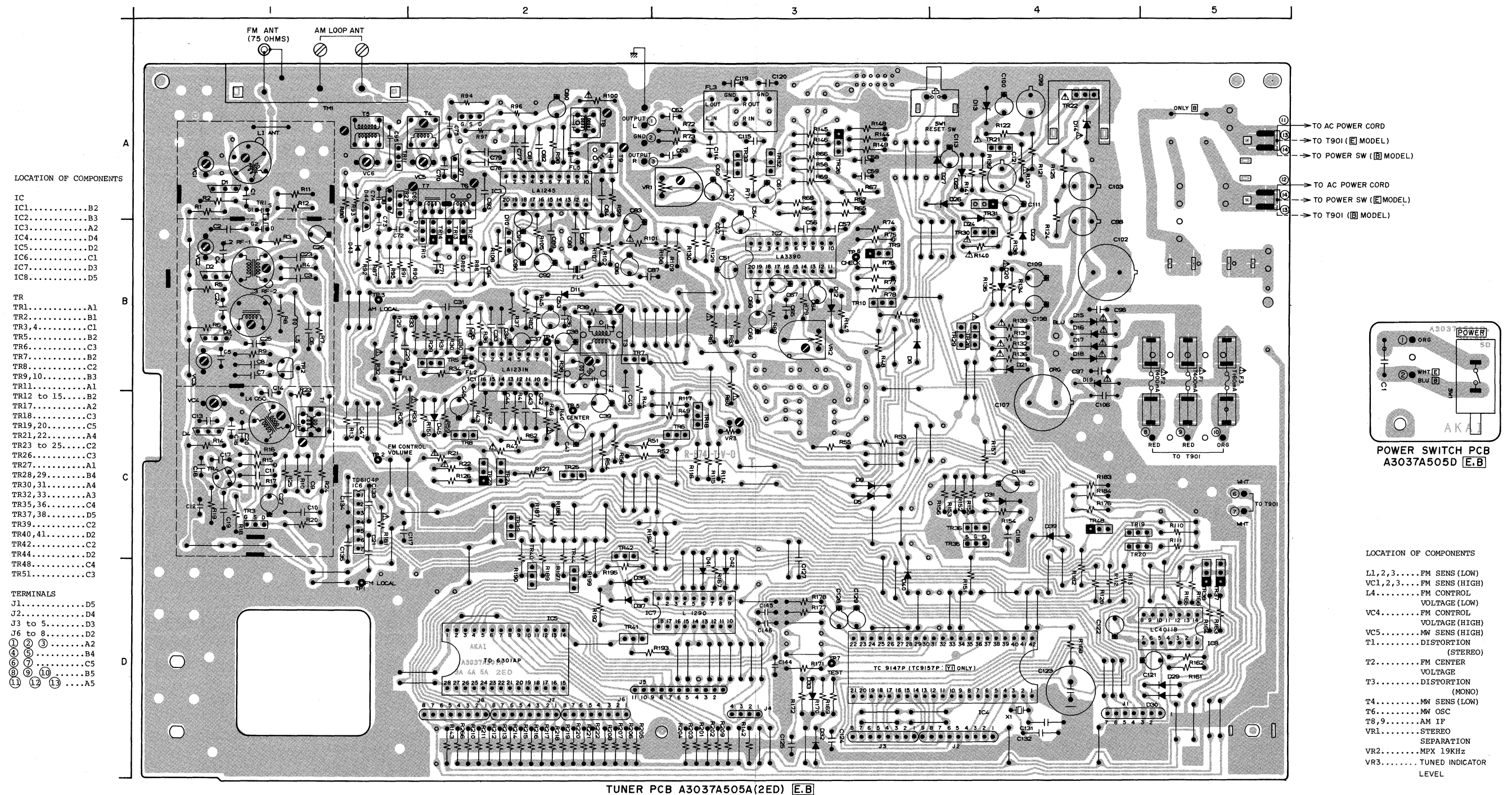
P.C BOARD TITLE	P.C BOARD NO.	DESTINATION
TUNER PCB	A3037A505A (ZED)	E, B
FLD PCB	A3037A505B	E, B
OPERATION PCB	A3037A505C	E, B

1) MODEL AT-S3 TUNER P.C BOARD A3037A501A(2ED), A3037A503A(2ED), A3037A504A (2ED) POWER SWITCH P.C BOARD A3037A5010, A3037A5030, A3037A5040

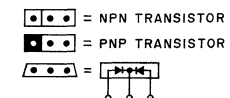
1) MODEL AT-S3 TUNER P.C BOARD A3037A501A(2ED), A3037A503A(2ED), A3037A504A (2ED) POWER SWITCH P.C BOARD A3037A5010, A3037A5030, A3037A5040



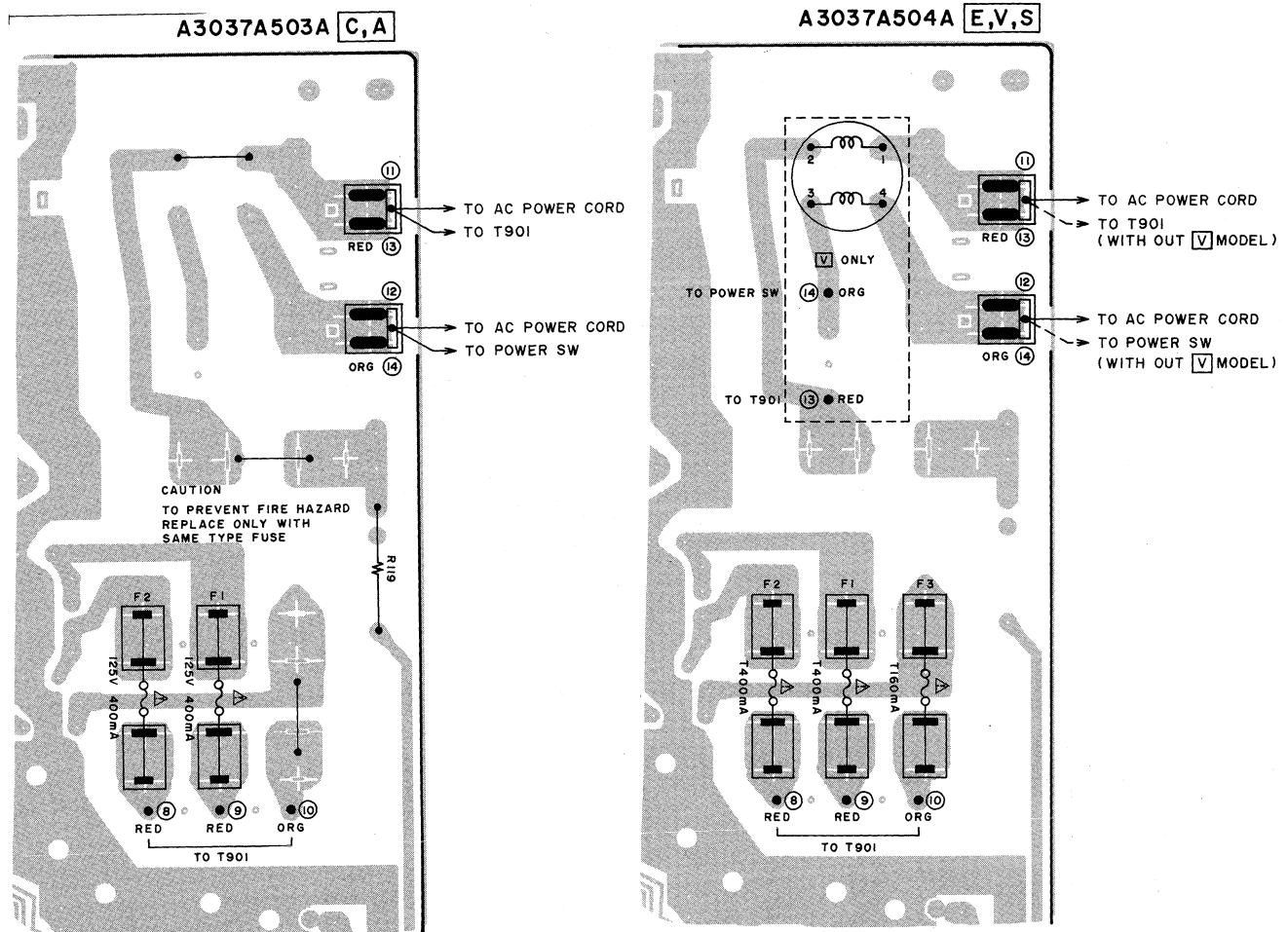
2) MODEL AT-S3/L TUNER P.C BOARD A3037A505A (2ED) POWER SWITCH P.C BOARD A3037A505D



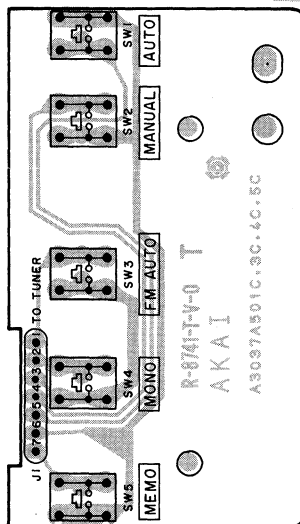
TR1	3SK107 (E)
TR2	2SC2999 (C,D)
TR3	2SK212 (D,E)
TR4	2SC930 (E,F)
TR5	2SC3000 (E,F)
TR6,7,8,10,18,19,20,24,25	
27 to 30,36,39 to 42,44	2SC536K - NP (E,F,G)
TR9,12,23,26,31,37,38,48	2SA608K - NP (E,F,G)
TR11	2SC2878 (A,B)
TR15	2SK246 (G,R)
TR17	2SK19 (O,Y)
TR21	2SD571 (L,M)
TR22	2SD313HP (E,F)
TR32,33	2SD1012 - V (F,G)
TR35	2SK223 (E,F)
TR51	2SC2603 (E,F)



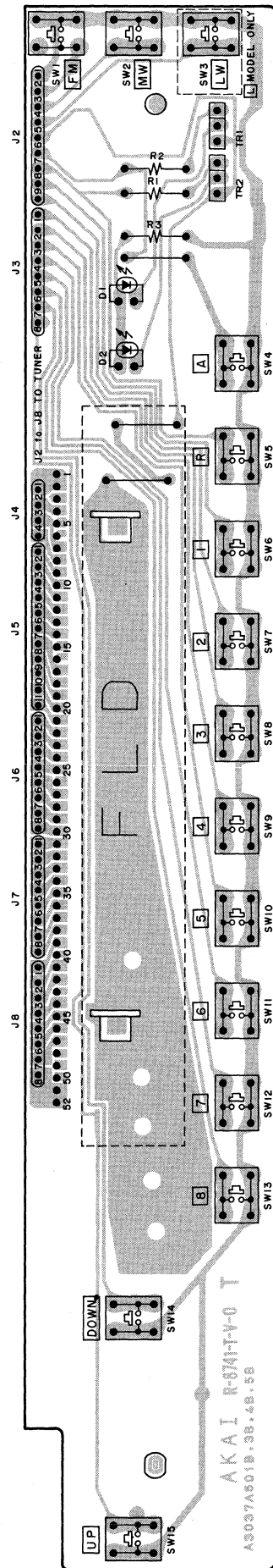
3) MODEL AT-S3 TUNER P.C BOARD A3037A503A (2ED) A3037A504A (2ED)



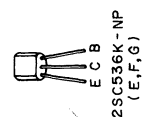
4) OPERATION P.C BOARD A3037A501C, A3037A 503C, A3037A 504C, A3037A 505C
& FLD P.C BOARD A3037A 501B, A3037A 503B, A3037A 504B, A3037A 505B



OPERATION PCB A3037A501C U.Y.I
503C C.A
504C E.V.S
(AT-S3L) 505C E.B



FLD PCB A3037A501B U.Y.I
503B C.A
504B E.V.S
(AT-S3L) 505B E.B



TRI, 2 --- 2SC536K-NP (E, F, G)

SECTION 2

PARTS LIST

TABLE OF CONTENTS

RECOMMENDED SPARE PARTS	19
1. TUNER P.C BOARD BLOCK	20
2. ASSEMBLY BLOCK	22
3. FRONT PANEL BLOCK	23
INDEX	24

Resistor and Capacitor which is not listed in this parts list, please refer to
COMMON LIST FOR SERVICE PARTS.

ATTENTION

1. When placing an order for parts, be sure to list the parts no., model no., and description. There are instances in which if any of this information is omitted, parts cannot be shipped or the wrong parts will be delivered.
2. Please be careful not to make a mistake in the parts no. If the parts no. is in error, a part different from the one ordered may be delivered.
3. Because parts number and parts unit supply in the Preliminary Parts List may be partially changed, please use this parts list for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List shows the parts that are considered necessary for repairs. Other parts, such as resistors and capacitors, are shown in the "Common List for Service Parts". Select and order such parts from the "Common List for Service Parts".
2. The Recommended Spare Parts shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not be supplied in principle.
4. How to read list
 - a) Mechanism Block
 - b) P.C Board Block

2. HEAD BASE BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
2-1x	BH-T2023A320A	HEAD BASE BLOCK GX-F66R
2-2	HP-H2206A010A	HEAD R/P PR4-8FU C
2-3	ZS-477876	PAN20×03STL CMT
2-4	ZS-536488	BID20×08STL CMT
2-5	ZG-402895	CS ANGLE ADJUST SPRING

SP (Service Parts) Classification
 A small "x" indicates the inability to show that particular part in the Photo or Illustration.
 This number corresponds with the individual parts index number in that figure
 This number corresponds with the Figure Number

6. SYS. CON. P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
6-1	BA-T2034A070A	PC SYS CON BLK GX-F44R
6-IC1	EI-324536	IC HD14049BP
6-IC2	EI-336801	IC MB8841-564M
6-IC3	EI-331661	IC SN7405N
6-IC4	EI-336725	IC M54527P
6-TR1to4	ET-200985	TR 2SC2603 F,G
6-TR5to28	ET-554657	TR 2SA733A P,Q
6-D1	ED-318292	D SILICON H 1S2473T-77 T26
6-D2to4	ED-308952	D GERMA V 1K34A-LR F07
6-D5to10	ED-318292	D SILICON H 1S2473T-77 T26
6-X1	EI-318384	OSC X'TAL NC-18C 3.579545MHZ

SP (Service Parts) Classification
 This reference numbers corresponds with symbol numbers of Schematic Diagrams.

5. Both the kind of part and installation position can be determined by the Parts Number. To determine where a parts number is listed, utilize Parts Index at end of Parts List. It is necessary first of all to find the Parts Number. This can be accomplished by using the Reference Number listed at right of parts number in the Parts Index.

WARNING

⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS

AVERTISSEMENT

⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

RECOMMENDED SPARE PARTS

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

REF. NO.	PARTS NO.	DESCRIPTION
1	BT-344375	△ TRANS POWER AT-M5T-20 (A)
2	BT-344376	△ TRANS POWER AT-M5T-30 (C)
3	BT-344377	△ TRANS POWER AT-M5T-40 (V)
4	BT-347888	△ TRANS POWER AT-M5T-42 (E)
5	BT-344378	△ TRANS POWER AT-M5T-50 (S,B)
6	BT-344379	△ TRANS POWER AT-M5T-70 (U)(U,Y1)
7	EC-330692	C S-FIX H TZ03R200E 4.2-20
8	EC-337772	C S-FIX H TZ03Z070E 2.0-7
9	ED-345746	D LED SLP636B-51 ORG
10	ED-336805	D SILICON DS135D-KB1 200/1.GA
11	ED-301911	D SILICON H DS448
12	ED-348205	D SILICON V MC931 DOUBLE
13	ED-336832	D VARACTOR SVC211SP
14	ED-337605	D VARACTOR SVC333(A) DOUBLE
15	ED-330218	D ZENER H HZ15L 2
16	ED-336944	D ZENER H 05Z16 X,Y
17	ED-338049	D ZENER H 05Z24 Y
18	ED-344153	D ZENER H 05Z30 Y
19	ED-343412	D ZENER H 05Z6.2 X,Y
20	EF-336834	△ FUSE EST3100 T 250V 0.16A (F3) (E,V,S,B)
21	EF-300599	△ FUSE EST3100 T 250V 0.40A (F2), (E,V,S,B)
22	EF-300599	△ FUSE FST3100 T 250V 0.40A (F1), (E,V,S,B)
23	EF-308933	△ FUSE TSC A 250V 0.20A (F4), (U,Y1)
24	EF-308848	△ FUSE TSC 125V 0.40A (F1) (C,A)
25	EF-308848	△ FUSE TSC 125V 0.40A (F2), (C,A)
26	EI-322248	IC LA1231N
27	EI-202218	IC LA1245
28	EI-343349	IC LA3390
29	EI-337013	IC LB1290
30	EI-330689	IC LC4011B
31	EI-344436	IC TC9147P
32	EI-349190	IC TC9157P
33	EI-344438	IC TD6104P
34	EI-344437	IC TD6301AP
35	EI-344422	OSC X'TAL HC-18/U 7.200000MHz
36	EM-344372	IND FL 9-BT-10ZYK CHARACTER
37	EO-344425	COIL DET 2 77-1119-01
38	EO-344433	COIL DET 2 77-1120-01
39	EO-332120	COIL FIX 2 103AK-005A 2.20UH
40	EO-343351	COIL IFT PEGK0008B-01 455.0kHz
41	EO-337640	COIL IFT 119AC-15533X 10.7MHz
42	EO-202216	COIL IFT 7MC-6733C 460.0kHz
43	EO-338409	COIL LF FKOB160MH02 250UH(V)
44	EO-307786	COIL OSC 2 7NR-6722Y 580.0UH
45	EO-348209	COIL OSC 2 7NR-8646Y 115.0UH
46	EO-336872	COIL VARI 2 TFEI-ANT-U
47	EO-336871	COIL VARI 2 TFEI-OSC-U
48	EO-336873	COIL VARI 2 TFEI-RF-1
49	EO-336938	COIL VARI 2 TFEI-RF-2
50	EO-338461	COIL VARI 2 TFEI-OSC-S (Y1)
51	EO-337598	COIL VARI 2 25A-1353-01
52	EO-337599	COIL VARI 2 25A-1354-03 (L)
53	ER-344434	FILTER CE BFU450C4N 0.450MHz
54	ER-338338	FILTER CE MS3GKY-A 10.700MHz (V, L-E)
55	ER-336804	FILTER CE SFE10.7MA8 10.7MHz(EXCEPT V, L-E)
56	ER-345729	FILTER CE SFE10.7MZ1KA 10.7MHz(L-E)
57	ER-344435	FILTER CE SFU450B9 0.450MHz
58	ER-336830	FILTER LC LP BL-34HD (V)
59	ER-347696	FILTER LC LP 42W-5001
60	ER-315407	FILTER CE SFE10.7MMKA 10.7MHz (EXCEPT L-E)
61	ES-348463	△ SW SLIDE X012B11Y 01-2 (SW901) (U,Y1)
62	ES-337902	SW PUSH SDLD1P 01-1
63	ES-347122	SW SLIDE 00420569 2-04-2S (U)

REF. NO.	PARTS NO.	DESCRIPTION
64	ES-344445	SW TACT EVQ-QHR12B
65	ES-336780	SW TACT KHH10902
66	ET-330588	TR FET 2SK19 O,Y (L)
67	ET-337744	TR FET 2SK212 D,E
68	ET-337759	TR FET 2SK246 GR (L)
69	ET-337743	TR FET 3SK107 E
70	ET-322778	TR 2SA608K-NP E,F,G
71	ET-200505	TR 2SC6603 E,F (V)
72	ET-338410	TR 2SC2878 A,B (L)
73	ET-336869	TR 2SC2999 C,D
74	ET-336935	TR 2SC3000 E,F
75	ET-322775	TR 2SC536K-NP E,F,G
76	ET-618873	TR 2SC930 E,F
77	ET-328437	TR 2SD1012-V F,G
78	ET-452531	TR 2SD313HP E,F
79	ET-655356	TR 2SD751 L,M
80	EV-337995	R -FIX H RVF8P01 3P 103
81	EV-337993	R S-FIX H RVF8P01 3P 203
82	EV-345745	R S-FIX V RVF8W01 3P 303 (L)

1. TUNER P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
1-1U	BA-A3037A020A	PC TUNER BLK AT-S3 (U)
1-1C	BA-A3037A020B	PC TUNER BLK AT-S3 (C)
1-1A	BA-A3037A020C	PC TUNER BLK AT-S3 (A)
1-1E	BA-A3037A020D	PC TUNER BLK AT-S3 (E)
1-1V	BA-A3037A020E	PC TUNER BLK AT-S3 (V)
1-1S	BA-A3037A020F	PC TUNER BLK AT-S3 (S)
1-1LE	BA-A3037A020G	PC TUNER BLK AT-S3L (E)
1-1LB	BA-A3037A020H	PC TUNER BLK AT-S3L (B)
1-1Y	BD-A3037A020J	PC TUNER BLK AT-S3 (Y1)

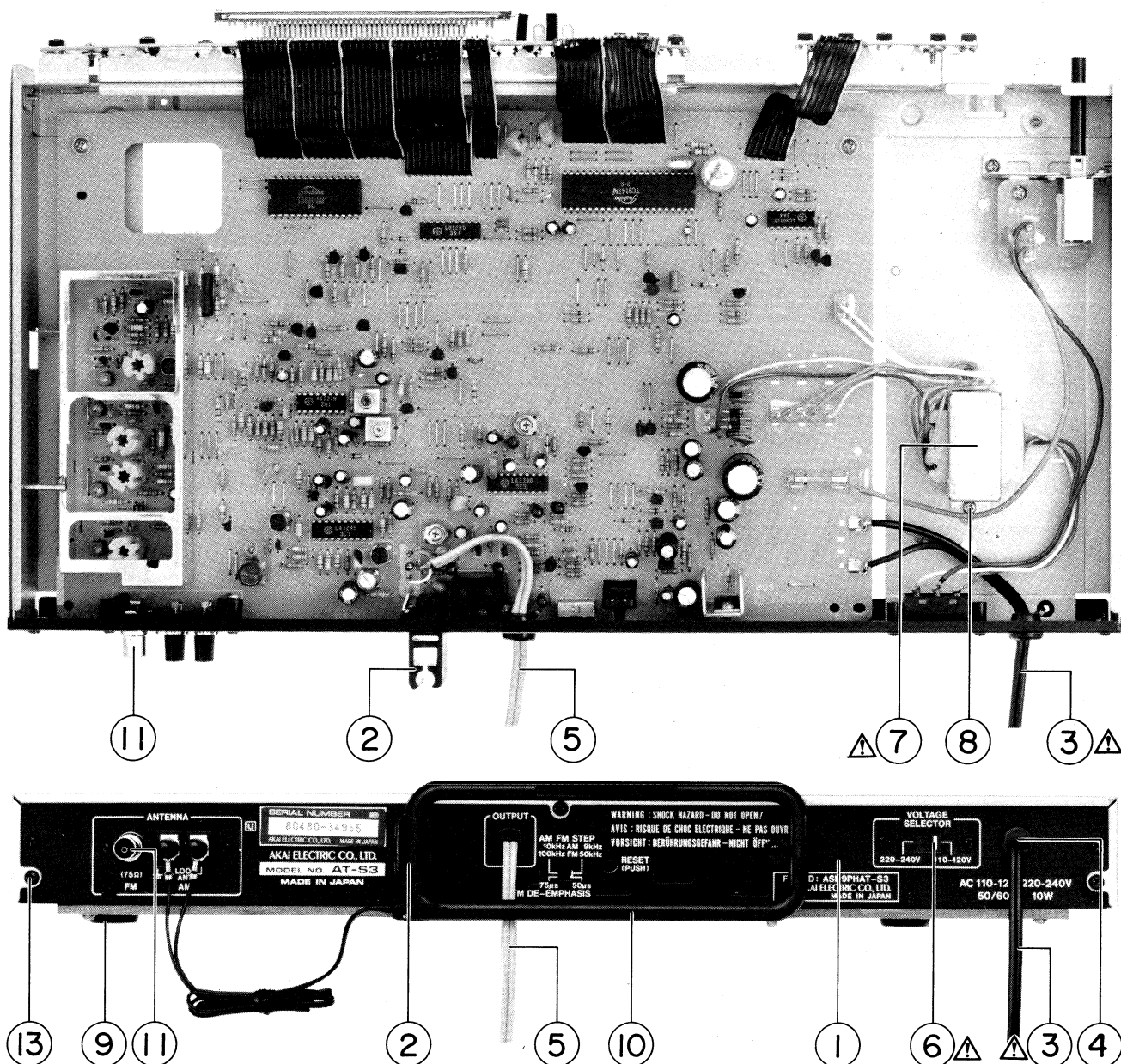
TUNER P.C BOARD

1-IC1A	EI-322248	IC LA1231N
1-IC2A	EI-343349	IC LA3390
1-IC3A	EI-202218	IC LA1245
1-IC4A	EI-344436	IC TC9147P (EXCEPT Y1)
1-IC4AY	EI-349190	IC TC9157P (Y1)
1-IC5A	EI-344437	IC TD6301AP
1-IC6A	EI-344438	IC TD6104P
1-IC7A	EI-337013	IC LB1290
1-IC8A	EI-330689	IC LC4011B
1-TR1A	ET-337743	TR FET 3SK107 E
1-TR2A	ET-336869	TR 2SC2999 C,D
1-TR3A	ET-337744	TR FET 2SK212 D,E
1-TR4A	ET-618873	TR 2SC930 E,F
1-TR5A	ET-336935	TR 2SC3000 E,F
1-TR6A to 8A	ET-322775	TR 2SC536K-NP E,F,G
1-TR9A	ET-322778	TR 2SA608K-NP E,F,G
1-TR10A	ET-322775	TR 2SC536K-NP E,F,G
1-TR11A	ET-338410	TR 2SC2876 A,B (L)
1-TR12A to 14A	ET-322778	TR 2SA608K-NP E,F,G (L)
1-TR15A	ET-337759	TR FET 2SK246 GR (L)
1-TR17A	ET-330588	TR FET 2SK19 O,Y (L)
1-TR18A	ET-322775	TR 2SC536K-NP E,F,G
1-TR19A to 20A	ET-322775	TR 2SC536K-NP E,F,G (L)
1-TR21A	ET-655356	△ TR 2SD571 L,M
1-TR22A	ET-452531	△ TR 2SD313HP E,F
1-TR23A	ET-322778	TR 2SA608K-NP E,F,G
1-TR25A	ET-322775	TR 2SC536K-NP E,F,G
1-TR26A	ET-322778	TR 2SA608K-NP E,F,G
1-TR27A	ET-322775	TR 2SC536K-NP E,F,G (L)
1-TR28A to 30A	ET-322775	△ TR 2SC536K-NP E,F,G
1-TR31A	ET-322778	TR 2SA608K-NP E,F,G
1-TR32A to 33A	ET-328437	TR 2SD1012-V F,G
1-TR35A	ET-336937	TR FET 2SK223 E,F
1-TR36A	ET-322775	TR 2SC536K-NP E,F,G
1-TR37A to 38A	ET-322778	TR 2SA608K-NP E,F,G
1-TR39A	ET-322775	TR 2SC536K-NP E,F,G
1-TR40	ET-322775	TR 2SC536K-NP E,F,G
1-TR41A to 44A	ET-322775	TR 2SC536K-NP E,F,G
1-TR48A	ET-322778	TR 2SA608K-NP E,F,G
1-TR51A	ET-200505	TR 2SC2603 E,F (V)
1-D1A to 3A	ED-336832	D VARACTOR SVC211SP
1-D4A	ED-336832	D VARACTOR SVC211SP
1-D5A to 6A	ED-301911	D SILICON H DS448
1-D7A to 8A	ED-337605	D VARACTOR SVC333 (A)
		DOUBLE
1-D9A	ED-301911	D SILICON H DS448
1-D10A	ED-348205	D SILICON V MC931 DOUBLE
1-D11A to 12A	ED-301911	D SILICON H DS 448
1-D13A	ED-343412	D ZENER H 05Z6.2 X,Y
1-D14A	ED-330218	△ D ZENER H HZ15L 2
1-D15A to 19A	FD-336805	△ D SILICON DS135D-KB1
		200/1.0A
1-D20A	ED-344153	D ZENER H 05Z30 Y
1-D21A	ED-338049	D ZENER H 05Z24 Y
1-D22A to 24A	ED-301911	D SILICON H DS448
1-D25A	ED-336944	D ZENER H 05Z16 X,Y
1-D26A to 40A	ED-301911	D SILICON H DS448
1-D41A to 43A	ED-200469	D SILICON H DS448 FAS F10
		(L)
1-D44A	ED-348205	D SILICON V MC931 DOUBLE
		(L)

REF. NO.	PARTS NO.	DESCRIPTION
1-D45A	ED-301911	D SILICON H DS448
1-SW1A	ES-344445	SW TACT EVQ-QHR12B
1-SW2A	ES-347122	SW SLIDE 00420569 2-04-2S
		(U)
1-L1A	EO-336872	COIL VARI 2 TFEI-ANT-U
1-L2A	EO-336873	COIL VARI 2 TFEI-RF-1
1-L3A	EO-336938	COIL VARI 2 TFEI-RF-2
1-L4A	EO-336871	COIL VARI 2 TFEI-OSC-U
1-L4AY	EO-338461	COIL VARI 2 TFEI-OSC-S
		(Y1)
1-L5A	EO-332120	COIL FIX 2 103AK-005A
		2.20 UH
1-L6A	EO-338409	COIL LF FKOB160MH02
		250 UH (V)
1-T1A	EO-337640	COIL IFT 119AC-15533X
		10.7MHz
1-72A	EO-344425	COIL DET 2 77-1119-01
1-T3A	EO-344433	COIL DET 2 77-1120-01
1-T4A	EO-337598	COIL VARI 2 25A-1353-01
1-15A	EO-337599	COIL VARI 2 25A-1354-03 (L)
1-T6A	EO-348209	COIL OSC 2 7NR-8646Y
		115.0UH
1-T7A	EO-307786	COIL OSC 2.7NR-6722Y
		580.0UH (L)
1-T8A	EO-343351	COIL IFT REGK0008B-01
		455.0 kHz
1-T9A	EO-202216	COIL IFT 7MC-6733C
		460.0kHz
1-FL1A	ER-315407	FILTER CE SFE10.7MMKA
		10.7MHz (EXCEPT L-E)
1-FL1AL	ER-345729	FILTER CE SFE10.7MZ1KA
		10.7MHz (L-E)
1-FL2A	ER-336804	FILTER CE SFE10.7MA8
		10.7MHz (EXCEPT V,L-E)
1-FL2AV	ER-338338	FILTER CE MS3GKY-A
		10.700MHz (V,L-E)
1-FL3A	ER-347696	FILTER LC LP 42W-5001
1-FL4A	ER-344434	FILTER CE BFU45004N
		0.450MHz
1-FL5A	ER-344435	FILTER CE SFU450B9
		0.450MHz
1-FL6A	ER-336830	FILTER LC LP BL-34HD (V)
1-X1A	EI-344422	OSC X'TAL MC-18/U
		7.200000MHz
1-VR1A	EV-337993	R S-FIX H RVF8P01 3P 203
1-VR2A	EV-337995	R S-FIX H RVF8P01 3P 103
1-VR3A	EV-345745	R S-FIX V RVF8W01 3P 303(L)
1-VC1A to 4A	EC-337772	C S-FIX H TZ03Z070E 2.0-7
1-VC5A to 6A	EC-330692	C S-FIX H TZ03R200E 4.2-20
1-R21 to 22A	ER-324480	△ R CB H S10 FS RDS 1/4W
		470J (L)
1-R32A to 61A	ER-324337	△ R CB H S10 FS RDS 1/4W
		560J
1-R100A	ER-324185	△ R CB H S10 FS RDS 1/4W
		221J
1-R101A	ER-324184	△ R CB H S10 FS RDS 1/4W
		121J
1-R120A	ER-322787	△ R CB H S10 FS RDS 1/4W
		100J
1-R132A	ER-324934	△ R CB H S10 FS RDS 1/4W
		220J
1-R133A	ER-323074	△ R CB H S10 FS RDS 1/4W
		102J
1-R136A	ER-200944	△ R CB H S10 FS RDS 1/4W
		152J
1-R140A	ER-328067	△ R CB H S10 FS RDS 1/4W
		331J
1-R181A	ER-324934	△ R CB H S10 FS RDS 1/4W
		220J
1-R251A	ER-328067	△ R CB H S10 FS RDS 1/4W
		331J (V)
1-C48A to 49A	EC-344155	C PP V F05 PP 181J 50DC (U)
1-C56AU	EC-344486	C PP V F05 PP 391J 50DC
		(EXCEPT C,A)
1-C56AC	EC-344478	C PP V F05 PP 561J 50DC
		(C,A)

REF. NO.	PARTS NO.	DESCRIPTION
1-C57AU	EC-344486	C PP V F05 PP 391J 50DC (EXCEPT C,A)
1-C57AC	EC-344478	C PP V F05 PP 561J 50DC (C,A)
1-C62A~63A	EC-344484	C PP V F05 PP 392J 50DC
1-C65A	EC-344483	C PP V F05 PP 102J 50DC
1-C71A	EC-344481	C PP V F05 PP 4700G 50DC
1-C72A	EC-344482	C PP V F05 PP 161J 50DC
1-C114A~115A	EC-347093	C PP V F05 PP 331J 50DC
1-C119A~120A	EC-347094	C PP V F05 PP 1801G 50DC
1-C123A	EC-344157	C DOUBLE LAYER 473Z 5.0DG
FLD P.C BOARD		
1-TR1B~2B	ET-322775	TR 2SC536K-NP E,F,G
1-D1B~2B	ED-345746	D LED SLP636B-51 ORG
1-SW1B~2B	ES-336780	SW TACT KHH 10902
1-SW3B	ES-336780	SW TACT KHH10902 (L)
1-SW4B~15B	ES-336780	SW TACT KHH10902
1-IND1B	EM-344372	IND FL 9-BT-10ZYK CHARACTER
OPERATION P.C BOARD		
1-SW1C~5C	ES-336780	SW TACT KHH 10902
POWER SWITCH P.C BOARD		
1-SW1D	ES-337902	SW PUSH SDLD1P 01-1
1-C1DU	EC-320548	△ C CE V F 103Z 250AC (U,C,A,Y1)
1-C1DE	EC-338577	△ C CE V F 472M 400AC (E)
1-C1DV	EC-338496	△ C CE V FZ 472P 400AC (V,S,B)
1-F1C	EF-308848	△ FUSE TSC 125V 0.40A (C,A)
1-F1E	EF-300599	△ FUSE FST3100 T 250V 0.40A (E,V,S,B)
1-F2C	EF-308848	△ FUSE TSC 125V 0.40A (C,A)
1-F2E	EF-300599	△ FUSE FST3100 T 250V 0.40A (E,V,S,B)
1-F3E	EF-336834	△ FUSE FST3100 T 250V 0.16A (E,V,S,B)
1-F4U	EF-380933	△ FUSE TSC A 250V 0.20A (U,Y1)

ASSEMBLY BLOCK



2. ASSEMBLY BLOCK

REF NO.	PARTS NO.	DESCRIPTION	REF. NO.	PARTS NO.	DESCRIPTION
2-1U	SP-344780J	PANEL REAR AT-S3(U)	2-6	ES-348463	△ SW SLIDE 00120297 01-2 (SW901), (U, Y1)
2-1C	SP-344780K	PANEL REAR AT-S3 (C,A)	2-7U	BT-344739	△ TRANS POWER AT-M5T-70 (U) (U,Y1)
2-1E	SP-344780M	PANEL REAR AT-S3 (E,V)	2-7C	BT-344376	△ TRANS POWER TA-M5T-30 (C)
2-1S	SP-344780N	PANEL REAR AT-S3 (S)	2-7A	BT-344375	△ TRANS POWER AT-M5T-20 (A)
2-1L	SP-344780P	PANEL REAR AT-S3L (E)	2-7E	BT-347888	△ TRANS POWER AT-M5T-41 (E)
2-1LB	SP-344780Q	PANEL REAR AT-S3L (B)	2-7V	BT-344377	△ TRANS POWER AT-M5T-40 (V)
2-2	SZ-332739	HOLDER ANTENNA	2-7S	BT-344378	△ TRANS POWER AT-M5T-50 (S,B)
2-3U	EW-306428	△ AC CORD 2 CORES KP-700A, VFF U/T (U,Y1)	2-8	ZS-315511	ST PAN30x06STL CMT CUP
2-3C	EW-305691	△ AC CORD 2 CORES KP-8, SPT-1 UC (C,A)	2-9	SA-202118	FOOT
2-3E	EW-336923	△ AC CORD 2 CORES KP-419C, LTCE-2F EV (E,V)	2-10	EE-337976	ANT LOOP LA-200A
2-3S	EW-336924	△ AC CORD 2 CORES KP-560, LTSA-2F S (S)	2-11	EJ-315331	SOCKET COAX M UX-0014
2-3B	EW-346249	△ AC CORD 2 CORES LCFL2x0.75 B (B)	2-12x	ZW-305013	RV POP32
2-4	EZ-631945	STRAIN RELIEF SP-4N-4	2-13	ZS-308846	T2BR30x08STL BZN PROJECTION
2-5	EW-336757	CORD SAE-020 PINX2 (EXCEPT C,A)			
2-5C	EW-336758	CORD SAE-021 PINX2 (C,A)			

PARTS LIST AT-S3/L

FRONT PANEL BLOCK



3. FRONT PANEL BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
3-1	BD-A3037A030A	PANEL FRONT BLK AT-S3
3-1P	BD-A3037A030B	PANEL FRONT BLK AT-S3-P
3-1L	BD-A3037A030C	PANEL FRONT BLK AT-S3L
3-1LP	BD-A3037A030D	PANEL FRONT BLK AT-S3L-P
3-2	SK-344807A	KNOB PUSH
3-2P	SK-344807B	KNOB PUSH-P
3-3	SK-342820D	KNOB POWER (3)
3-3P	SK-342820C	KNOB POWER-P (2)
3-4x	ZG-322189	SP (B)

FINAL ASSEMBLY

3-5	SP-344778C	COVER UPPER (B)
3-5P	SP-344778D	COVER UPPER (B)-P

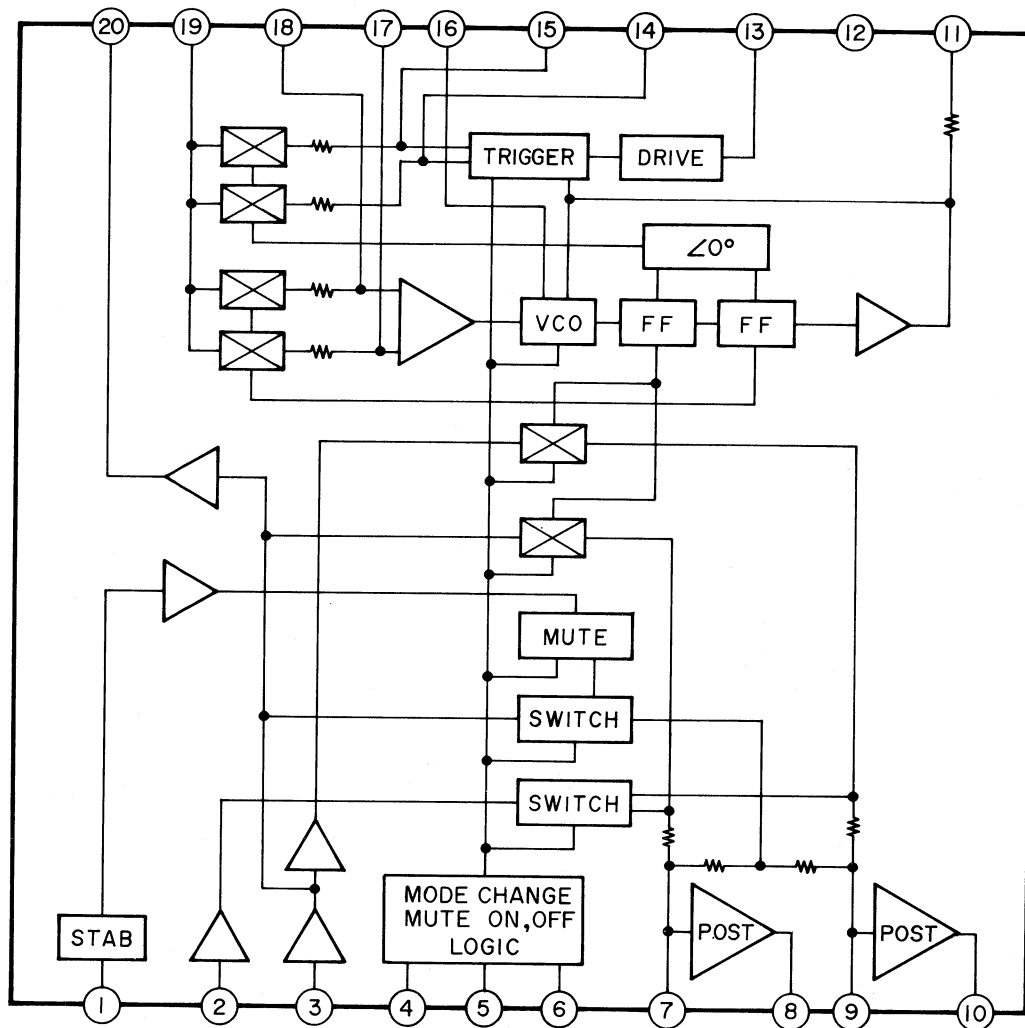
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PARTS NO.	REF. NO.	PARTS NO.	REF. NO.	PARTS NO.	REF. NO.	PARTS NO.	REF. NO.	PARTS NO.	REF. NO.
BA-A3037A020A1-1U		ED-338049	1-D21A	ES-336780	1-SW2B	ZG-322189	3-4X		
BA-A3037A020P 1-1C		ED-343412	1-D13A	ES-336780	1-SW4B	ZS-308846	2-13		
BA-A3037A020C 1-1A		ED-344153	1-D20A	ES-336780	1-SW6B	ZS-315511	2-8		
BA-A3037A020D 1-1E		ED-345746	1-D1B	ES-336780	1-SW1C	ZW-305013	2-12X		
BA-A3037A020E 1-1V		ED-345746	1-D2B	ES-336780	1-SW8B				
BA-A3037A020F 1-1S		ED-348205	1-D10A	ES-336780	1-SW7B				
BA-A3037A020G 1-1LE		ED-348205	1-D44A	ES-336780	1-SW9B				
BA-A3037A020H 1-1LB		EE-337976	2-10	ES-337902	1-SW1D				
BD-A3037A020J 1-1Y		EF-300599	1-F1E	ES-344445	1-SW1A				
BD-A3037A030A 3-1		EF-300599	1-F2E	ES-347122	1-SW2A				
BD-A3037A030B 3-1P		EF-308848	1-F2C	ES-348463	2-6				
BD-A3037A030C 3-1L		EF-308848	1-F1C	ET-200505	1-TR51A				
BD-A3037A030D 3-1LP		EF-308933	1-F4U	ET-322775	1-TR1B				
BT-344375 2-7A		EF-336834	1-F3E	ET-322775	1-TR28A				
BT-344376 2-7C		EI-202218	1-IC3A	ET-322775	1-TR36A				
BT-344377 2-7V		EI-322248	1-IC1A	ET-322775	1-TR18A				
BT-344378 2-7S		EI-330689	1-IC8A	ET-322775	1-TR20A				
BT-344379 2-7U		EI-337013	1-IC7A	ET-322775	1-TR6A				
BT-347388 2-7E		EI-343349	1-IC2A	ET-322775	1-TR40				
EC-320548 1-C1DU		EI-344422	1-X1A	ET-322775	1-TR39A				
EC-330692 1-VC5A		EI-344436	1-IC4A	ET-322775	1-RT7A				
EC-330692 1-VC6A		EI-344437	1-IC5A	ET-322775	1-TR27A				
EC-337772 1-VC1A		EI-344438	1-IC6A	ET-322775	1-TR2B				
EC-337772 1-VC2A		EI-349190	1-IC4AY	ET-222775	1-TR8A				
EC-337772 1-VC3A		EJ-315331	2-11	ET-322775	1-TR25A				
EC-337772 1-VC4A		EM-344372	1-IND1B	ET-322775	1-TR44A				
EC-338496 1-C1DV		EO-202216	1-T9A	ET-322775	1-TR41A				
EC-338577 1-C1DE		EO-307786	1-T7A	ET-322775	1-TR42A				
EC-344155 1-C49A		EO-332120	1-L5A	ET-322775	1-TR10A				
EC-344155 1-C48A		EO-336871	1-L4A	ET-322775	1-RT29A				
EC-344157 1-C123A		EO-336872	1-L1A	ET-322775	1-TR30A				
EC-344478 1-C56AC		EO-336873	1-L2A	ET-322775	1-RT19A				
EC-344478 1-C57AC		EO-336938	1-L3A	ET-322778	1-TR38A				
EC-344481 1-C71A		EO-337598	1-T4A	ET-322778	1-TR9A				
EC-344482 1-C72A		EO-337599	1-R5A	ET-322778	1-TR48A				
EC-344483 1-C65A		EO-337640	1-T1A	ET-322778	1-TR12A				
EC-344484 1-C62A		EO-338409	1-L6A	ET-322778	1-TR13A				
EC-344484 1-C63A		EO-338461	1-L4AY	ET-322778	1-TR23A				
EC-344486 1-C57AU		EO-343351	1-T8A	ET-322778	1-TR14A				
EC-344486 1-C56AU		EO-344425	1-T2A	ET-322778	1-TR26A				
EC-347093 1-C115A		EO-344433	1-T3A	ET-322778	1-TR37A				
EC-347093 1-C114A		EO-348209	1-T6A	ET-322778	1-TR31A				
EC-347094 1-C120A		ER-200944	1-R136A	ET-328437	1-TR32A				
EC-347094 1-C119A		ER-315407	1-FL1A	ET-328437	1-TR33A				
ED-200469 1-D41A		ER-322787	1-R120A	ET-330588	1-TR17A				
ED-200469 1-D42A		ER-323074	1-R133A	ET-336869	1-TR2A				
ED-200469 1-D43A		ER-324184	1-R101A	ET-336935	1-TR5A				
ED-301911 1-D39A		ER-324185	1-R100A	ET-336937	1-TR35A				
ED-301911 1-D31A		ER-324337	1-R47A	ET-337743	1-RT1A				
ED-301911 1-D26A		ER-324337	1-R32A	ET-337744	1-TR3A				
ED-301911 1-D30A		ER-324337	1-R60A	ET-337759	1-TR15A				
ED-301911 1-D29A		ER-324337	1-R33A	ET-338410	1-TR11A				
ED-301911 1-D27A		ER-324337	1-R46A	ET-452531	1-TR22A				
ED-301911 1-D37A		ER-324337	1-R61A	ET-618873	1-TR4A				
ED-301911 1-D33A		ER-324480	1-R21A	ET-655356	1-TR21A				
ED-301911 1-D32A		ER-324480	1-R22A	EV-337993	1-VR1A				
ED-301911 1-D38A		ER-324934	1-R132A	EV-337995	1-VR2A				
ED-301911 1-D40A		ER-324934	1-R181A	EV-345745	1-VR3A				
ED-301911 1-D45A		ER-328067	1-R140A	EV-305691	2-3C				
ED-301911 1-D5A		ER-328067	1-R251A	EW-306428	2-3U				
ED-301911 1-D6A		ER-336804	1-FL2A	EW-336757	2-5				
ED-301911 1-D24A		ER-336830	1-FL6A	EW-336758	2-5C				
ED-301911 1-D9A		ER-338338	1-FL2AV	EW-336923	2-3E				
ED-301911 1-D23A		ER-344434	1-FL4A	EW-336924	2-3S				
ED-301911 1-D11A		ER-344435	1-FL5A	EW-346249	2-3B				
ED-301911 1-D12A		ER-345729	1-FL1AL	EZ-631945	2-4				
ED-301911 1-D22A		ER-347696	1-FL3A	SA-202118	2-9				
ED-330218 1-D14A		ES-336780	1-SW1B	SK-342820C	3-3P				
ED-336805 1-D17A		ES-336780	1-SW2C	SK-342820D	3-3				
ED-336805 1-D16A		ES-336780	1-SW4C	SK-344807A	3-2				
ED-336805 1-D15A		ES-336780	1-SW3C	SK-344807B	3-2P				
ED-336805 1-D18A		ES-336780	1-SW5C	SP-344778C	3-5				
ED-336805 1-D19A		ES-336780	1-SW14B	SP-344778D	3-5P				
ED-336832 1-D2A		ES-336780	1-SW11B	SP-344780J	2-1U				
ED-336832 1-D1A		ES-336780	1-SW15B	SP-344780K	2-1C				
ED-336832 1-D4A		ES-336780	1-SW10B	SP-344780M	2-1E				
ED-336832 1-D3A		ES-336780	1-SW5B	SP-344780N	2-1S				
ED-336944 1-D25A		ES-336780	1-SW13B	SP-344780P	2-1L				
ED-337605 1-D7A		ES-336780	1-SW3B	SP-344780Q	2-1LB				
ED-337605 1-D8A		ES-336780	1-SW12B	SZ-332739	2-2				

SECTION 3

SCHEMATIC DIAGRAM

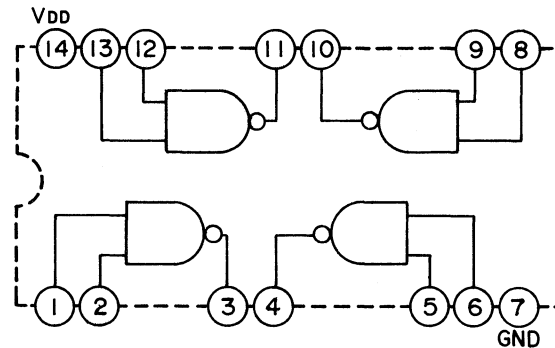
1. SCHEMATIC DIAGRAM OF IC's	25
2. AT-S3/L No. 3-1 830701A SCHEMATIC DIAGRAM	29
3. AT-S3 No. 3-2 830702A SCHEMATIC DIAGRAM	30
4. AT-S3/L No. 3-3 830703A SCHEMATIC DIAGRAM	31



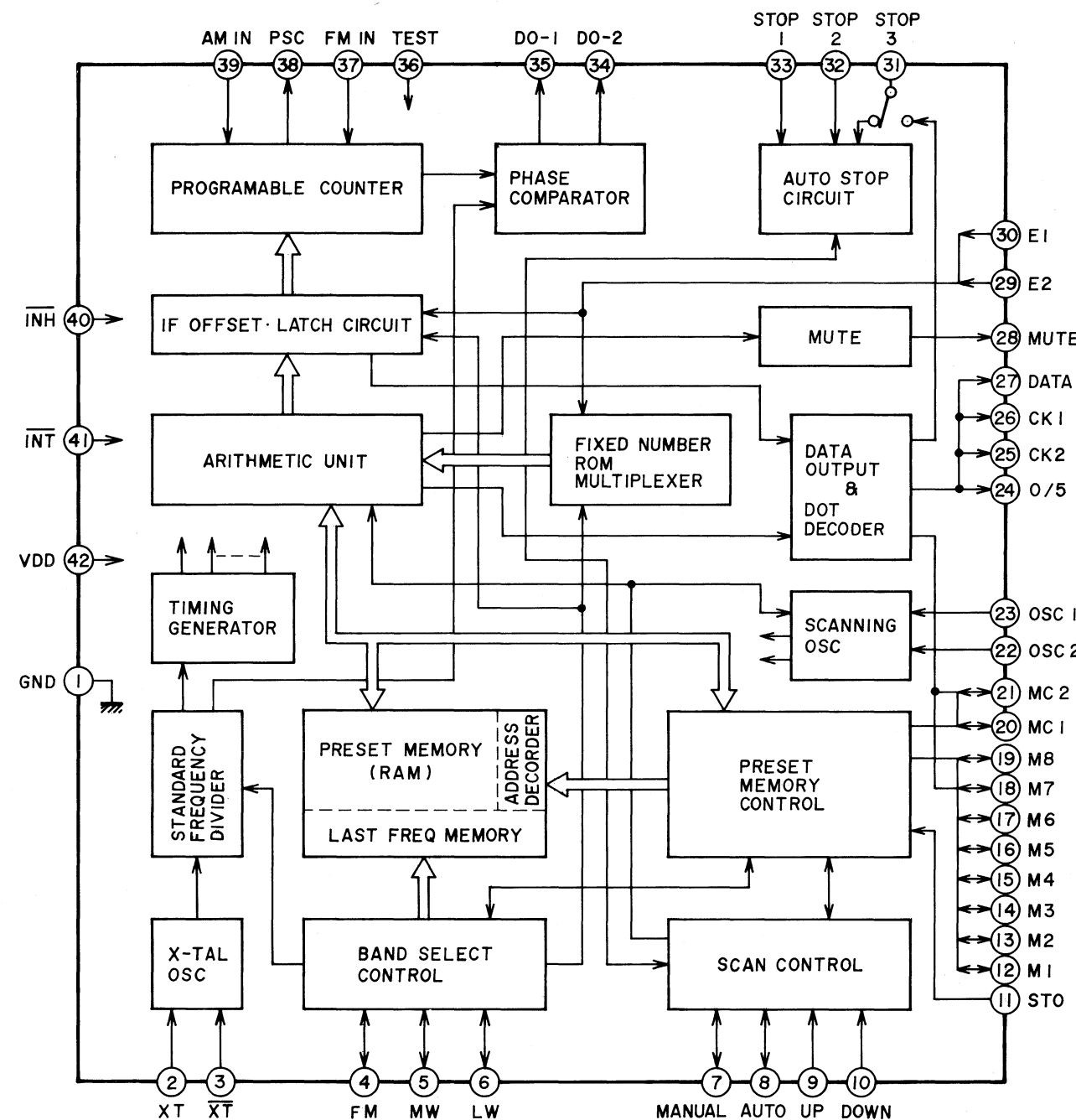
FUNCTION CHART FOR LA3390

Pin No.	Description	Pin No.	Description
1	VCC	11	Compulsory Mono, VCO Stop, 19kHz Check
2	AM Input	12	GND
3	FM Input	13	Stereo Indicator
4	FM/AM SW Mute Time Constant	14	Pilot Sync Detect Filter
5	Mute Control (ON/OFF)	15	
6	FM/AM SW	16	VCO Time Constant
7	Post Amp (Negative in)	17	PLL Loop Filter
8	Post Amp (LCH out)	18	
9	Post Amp (Negative in)	19	Phase Comparator Input
10	Post Amp (Rch out)	20	Composite Amp Output

LC4011B



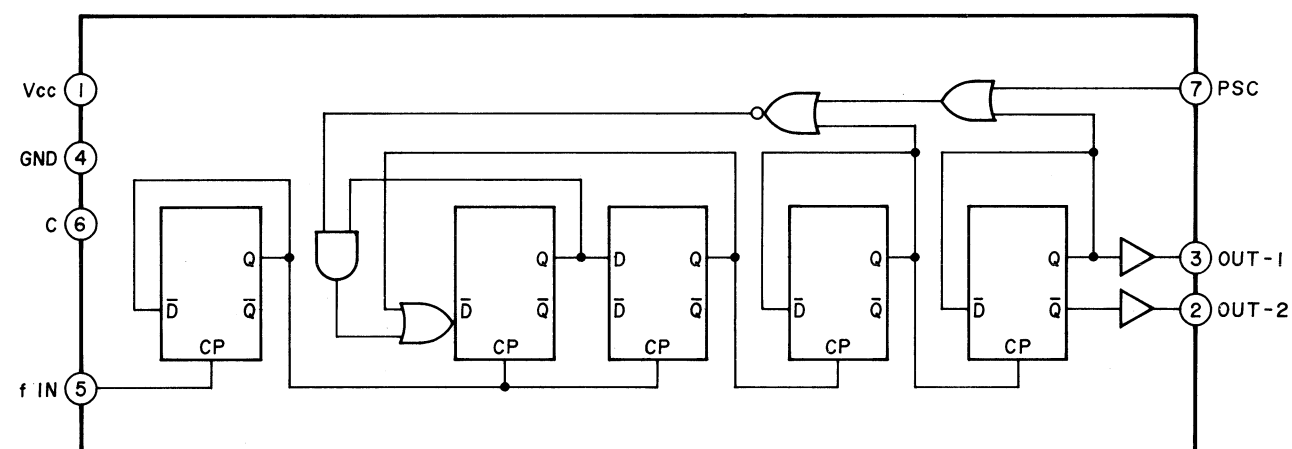
TC9147P TC9157P



FUNCTION CHART FOR TC9147P & TC9157P

Pin No.	Symbol	Meaning	Function
1	GND	Ground	
2	XT	X-TAL OSC Terminals	Input Terminal of Standard Frequency OSC (X-TAL: 7.2MHz)
3	XT		
4	FM	FM Band Designation Input	Band Selector
5	MW	MW Band Designation Input	
6	LW	LW Band Designation Input	
7	Manual	Manual Tuning Mode	Manual/Auto Tuning Selector
8	Auto	Auto Tuning Mode	
9	UP	UP Operation Key Input	UP/DOWN Tuning Selector
10	Down	Down Operation Key Input	
11	STO	Memory Store Command Input	Memory at preset memory operation
12	M1	Preset Memory Channel Designation Inputs	Random Access for 16-Preset-Memory with the inputs of MC1/MC2
19	M8		
20	MC1		
21	MC2	Memory Control Input	8 Stations (FM/AM) 16 Stations (FM + MW + LW) Preset Memory Selector
22	OSC2	AM SCAN OSC Terminal	CR Connector Terminal for AM Search Scan Speed
23	OSC1	FM SCAN OSC Terminal	CR Connection Terminal for FM Search Scan Speed
24	O/5	FM 50kHz Output	Level "H" Output for 50kHz Step (S. Africa and Europe area)
25	CK2	Receiving Frequency Data Serial Output	Supply Serial Data & Timing Clock to TD6301AP (Receiving Frequency Digital Display Driver)
26	CK1		
27	Data	Muting Signal Output	Level "H" Output when Muting
28	Mute		
29	E2	Area Designation Input	Area Selector Japan, US, Europe (TC9147P) S. Africa, US, Europe (TC9157P)
30	E1		
31	Stop 3	AM IF Signal Input	Not used (Connected to VDD terminal to avoid the malfunction by noise)
32	Stop 2	Auto Search Stop Signal Input	Stops Auto Search at Level "H" while Level "H" at Stop 1
33	Stop 1	Scan Speed Slow-Down Input	1/2 Speed-Down of Auto Search at Level "H"
34	DO-2	Phase Comparator Output	Phase Comparator Output
35	DO-1		
36	Test	Test Terminal	Test Mode at Level "H"
37	FM in	FM Programable Counter Input	Connected to Prescaler (TD6104P) Output
38	PSC	Prescaler Control Output	Count-Down (1/30, 1/32) Designation Out-put for Prescaler
39	AM in	AM Programable Counter Input	AM Local OSC Signal Input
40	INH	Inhibit Input	Normal at Level "H"
41	INT	Initialize Input	Normal at Level "H"
42	VDD	Power Terminal	Initialize at Level "L"
			+5V is supplied

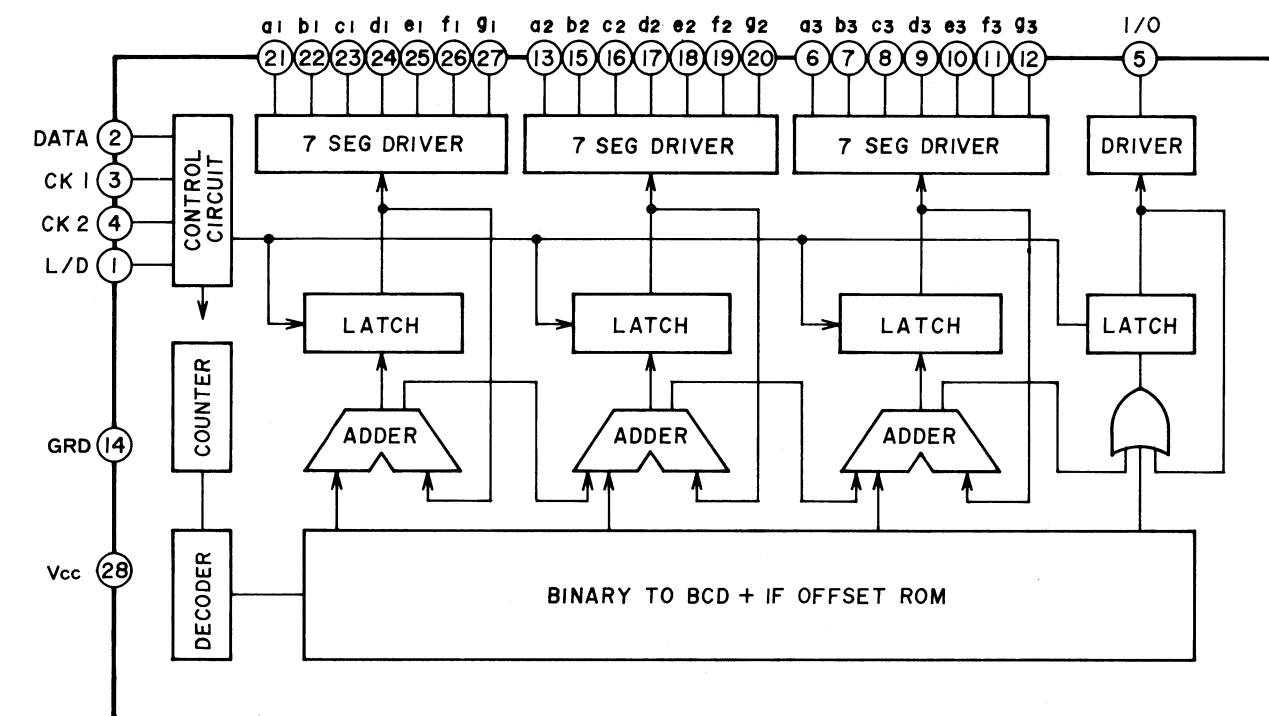
TD6104P



FUNCTION CHART FOR TD6104P

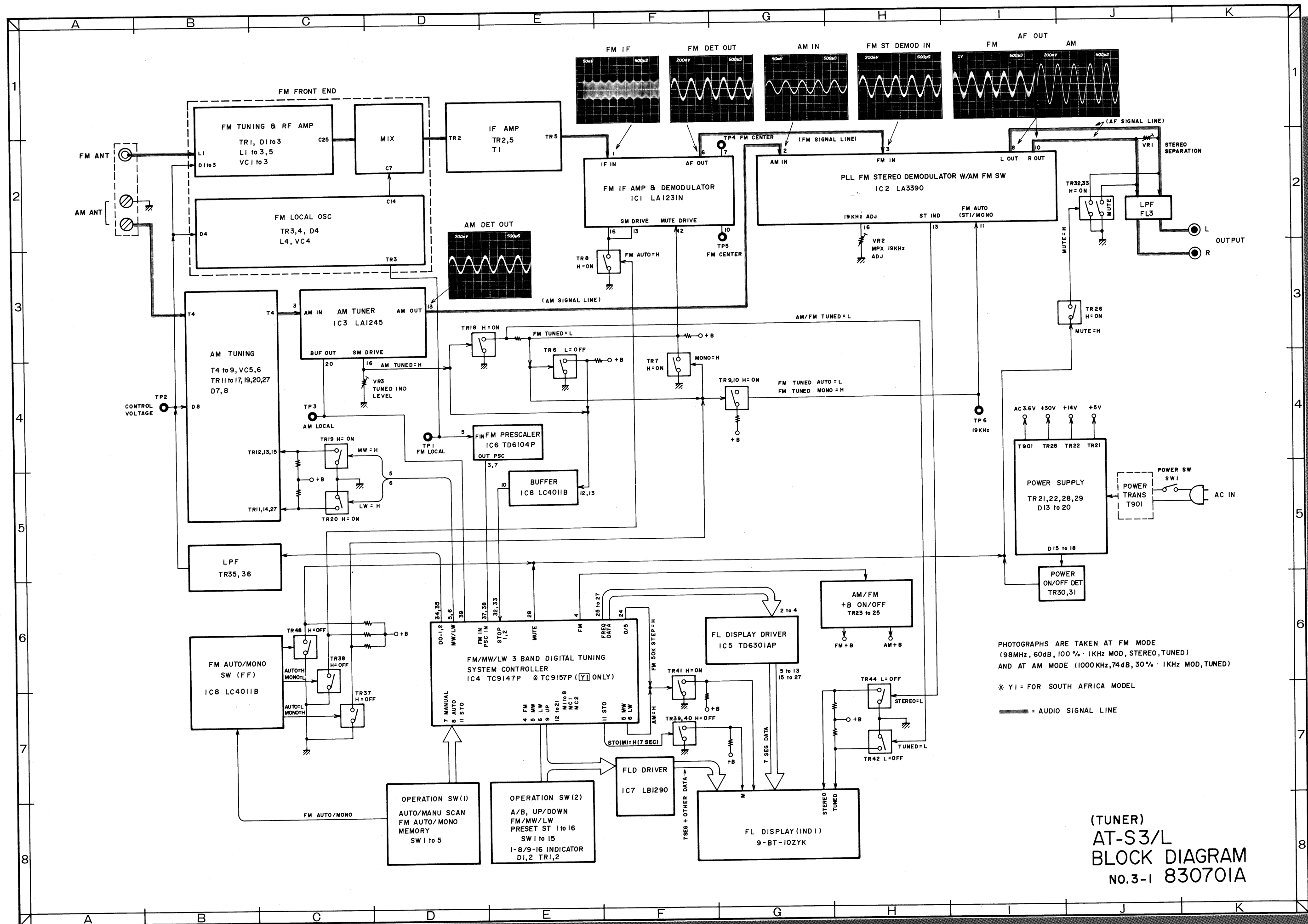
Pin No.	Symbol	Description
1	VCC	+5V
2	OUT-2	Inverted output of OUT-1
3	OUT-1	Count-Down Frequency Output ($f_{in}/30$ or $f_{in}/32$)
4	GND	Ground
5	f_{in}	FM Local OSC Input
6	C	Bypass capacitor terminal for bias circuit
7	PSC	Count-Down-Ratio Switch Signal Input 1/32 at $V_{psc} \geq 2V$ 1/30 at $V_{psc} \leq 1V$

TD6301AP

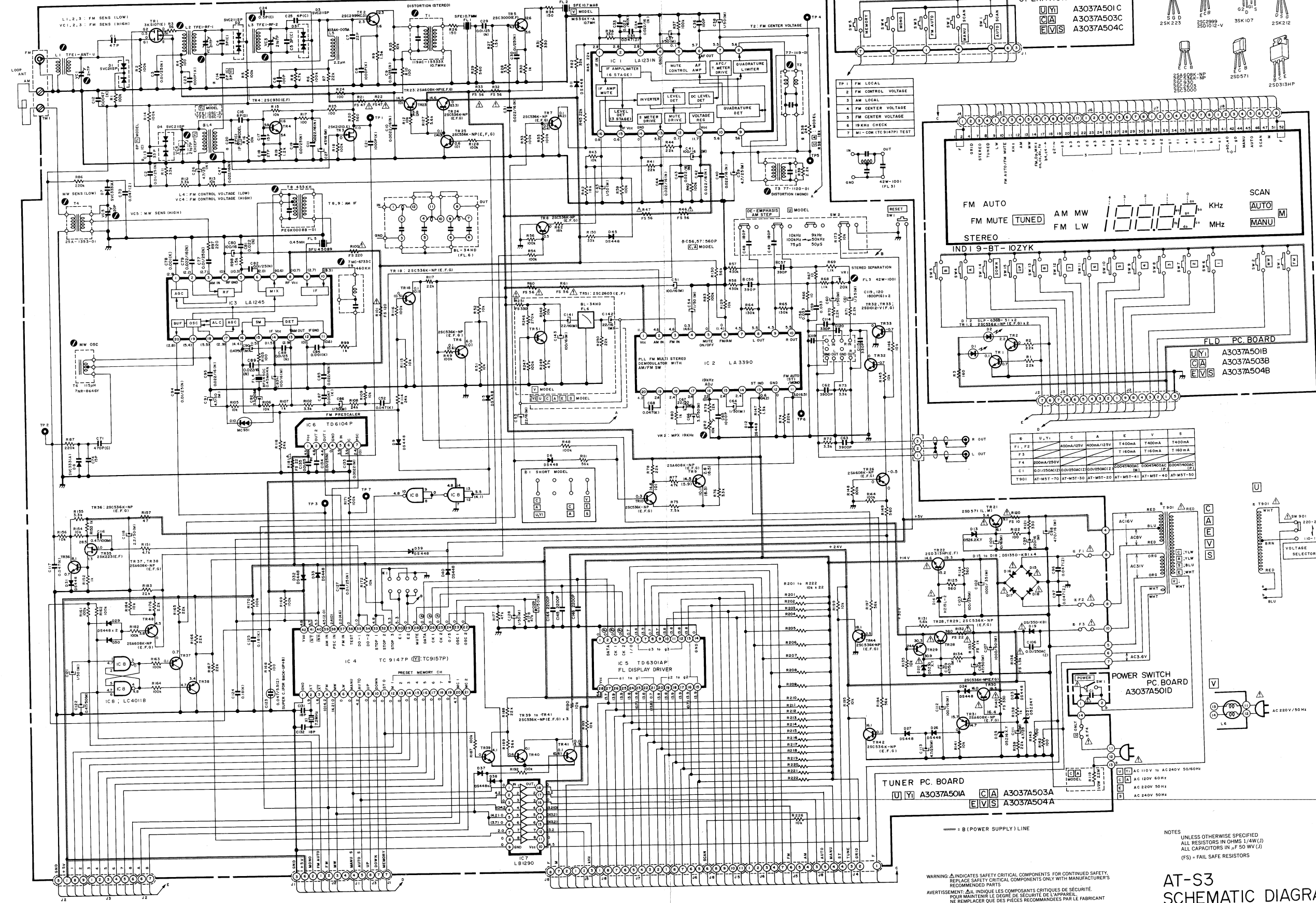


FUNCTION CHART FOR TD6301AP

Pin No.	Symbol	Description
1	L/D	Output Select Signal Input Terminal (To change the output for various display such as LED, FLD & LCD). Connected to ground for FLD.
2	Data	Receiving Frequency Data Input Terminal (Serial Input from System Controller LSI: TC9147P/TC9157P)
3	CK1	Control Timing Input Terminal for Receiving Frequency Data Input (Simultaneously W/Data from System Controller LSI)
4	CK2	
5	I/O	Segment Driver Output Terminal for: FM: 100 ⁸ MHz AM: 1000 ⁸ kHz
6	a3	7 Segment Driver Output Terminals for: FM: 10 ⁸ MHz AM: 100 ⁸ kHz
12	g3	
13	a2	7 Segment Driver Output Terminals for: FM: 1 ⁸ MHz AM: 10 ⁸ kHz
15	g2	
20	g1	7 Segment Driver Output Terminals for: FM: 100 ⁸ kHz AM: 1 ⁸ kHz
21	a1	
27	g1	
14	VCC	+5V
28	GND	Ground



AT-S3



AT-S3
 SCHEMATIC DIAGRAM
 NO.3-2 830702A

